

IN THE CLAIMS:

- 1 1. (Original) Method for comparing a first content with a second content to determine
2 whether the contents are identical, the method comprising the steps of:
3 identifying a protocol encoding the first content and second content;
4 computing a first signature of the first content and a second signature of the sec-
5 ond content; and
6 comparing the first computed signature with the second signature to determine
7 whether the first content is identical to the second content.
- 1 2. (Original) The method of claim 1 further comprising the steps of:
2 selecting a first set of data segments from the first content and a second set of data
3 segments from the second content; and
4 using the selected first set of data segments and the second set of data segments to
5 compute the first signature and the second signature.
- 1 3. (Original) The method of claim 2 wherein the selected first set of data segments and
2 second set of data segments comprise locations associated with one or more protocol
3 markers.
- 1 4. (Original) The method of claim 1 wherein the step of computing the signature of the
2 first content and the signature of the second content further comprises the steps of:
3 identifying one or more protocol markers associated with the first content; and
4 identifying one or more protocol markers associated with the second content.
- 1 5. (Original) The method of claim 4 wherein the one or more protocol markers associ-
2 ated with the first content comprises discrete cosine coefficients.

1 6. (Original) The method of claim 4 wherein the one or more protocol markers associ-
2 ated with the second content comprises discrete cosine coefficients.

1 7. (Original) The method of claim 4 wherein the one or more protocol markers associ-
2 ated with the first content comprises motion vectors.

1 8. (Original) The method of claim 4 wherein the one or more protocol markers associ-
2 ated with the second content comprises motion vectors.

1 9. (Original) The method of claim 4 further comprising the steps of:
2 identifying a length of the first content; and
3 identifying a length of the second content.

1 10. (Previously Presented) A content comparator executing on a computer, the content
2 comparator adapted to compare first content with a second content, the comparator com-
3 prising:
4 a protocol identification module configured to identify a first protocol associated
5 with the first content and a second protocol associated with the second content;
6 a plurality of data segmentation modules configured to select a set of data seg-
7 ments from each of the first content and the second content;
8 a plurality of signature computation modules configured to generate a first signa-
9 ture of the first content and a second signature of the second content; and
10 a signature comparison module configured to compare the first signature with the
11 second signature.

1 11. (Original) An apparatus for comparing a first content with a second content, the ap-
2 paratus comprising:
3 means for identifying a protocol encoding the first content and the second content;

4 means for selecting a set of data segments from the first content and the second
5 content;

6 means for computing a signature of the first content and a signature of the second
7 content; and

8 means for comparing the computed signature of the first content with the com-
9 puted signature of the second content.

1 12. (Original) The apparatus of claim 11 wherein the selected data segments comprises
2 locations associated with one or more protocol markers.

1 13. (Original) The apparatus of claim 11 wherein the means for computing the signature
2 of the first content and the signature of the second content further comprises:

3 means for identifying one or more protocol markers associated with the first con-
4 tent; and

5 means for identifying one or more protocol markers associated with the second
6 content.

1 14. (Original) The apparatus of claim 13 wherein the one or more protocol markers as-
2 sociated with the first content comprises discrete cosine coefficients.

1 15. (Original) The apparatus of claim 13 wherein the one or more protocol markers as-
2 sociated with the second content comprises discrete cosine coefficients.

1 16. (Original) The apparatus of claim 13 wherein the one or more protocol markers as-
2 sociated with the first content comprises motion vectors.

1 17. (Original) The apparatus of claim 13 wherein the one or more protocol markers as-
2 sociated with the second content comprises motion vectors.

- 1 18. (Original) The apparatus of claim 13 further comprises:
2 means for identifying a length of the first content; and
3 means for identifying a length of the second content.
- 1 19. (Original) A method to compare a first content with a second content in a network
2 storage environment, the method comprising the steps of:
3 receiving the first content;
4 computing a signature of the first content;
5 comparing the computed signature of the first content with a signature of the second
6 content; and
7 identifying, if the computed signature of the first content matches the signature of the
8 second content, that the first content is identical to the second content.
- 1 20. (Original) The method of claim 19 wherein the step of computing the signature of
2 the first further comprises the steps of:
3 identifying a set of protocol markers associated with the content; and
4 generating the signature from the identified set of protocol markers.
- 1 21. (Previously Presented) The method of claim 20 wherein the set of protocol markers
2 further comprise a set of discrete cosine coefficients.
- 1 22. (Previously Presented) The method of claim 20 wherein the set of protocol markers
2 further comprises one or more motion vectors.
- 1 23. (Original) The method of claim 19 wherein a size of the received content is utilized
2 in creating the signature.
- 1 24. (Original) A method for identifying content using a protocol associated with the
2 content as a signature, the method comprising the steps of:

3 determining the protocol associated with the content;
4 identifying a set of markers associated with the protocol;
5 obtaining a set of markers from the content using the set of marker associated
6 with the protocol; and
7 generating a signature of the content using the identified markers.

1 25. (Original) The method of claim 24 wherein the identified markers are within a sub-
2 set of the entire content.

1 26. (Original) The method of claim 24 wherein a size associated with the content is util-
2 ized to uniquely identify the content.

1 27. (Original) The method of claim 24 wherein the signature is utilized in a network
2 caching device to determine whether data should be forwarded from the network caching
3 device.

1 28. (Original) The method of claim 24 wherein the signature is utilized to determine if a
2 local copy of the content should be accessed.

1 29. (Original) The method of claim 24 wherein the signature is utilized to determine if a
2 remote copy of the content should be accessed.

1 30. (Previously Presented) A protocol marker identifier executing on a computer for
2 generating a signature of a content comprising:
3 a data segmentation module configured to select a set of data segments from the
4 content; and
5 a signature computation module configured to generate the signature from the set
6 of data segments.

1 31. (Previously Presented) The protocol marker identifier of claim 30 further comprising
2 a protocol identification module configured to identify a protocol associated with the con-
3 tent.

1 32. (Previously Presented) The protocol marker identifier of claim 30 wherein the signa-
2 ture comprises a set of protocol markers.

1 33. (Original) The protocol marker identifier of claim 32 wherein the set of protocol
2 markers comprises a set of discrete cosine transform coefficients.

1 34. (Original) A network caching device adapted to utilize a signature associated with a
2 protocol for caching decisions, the network caching device comprising:

3 means for determining a protocol of new contents;
4 means for computing a signature of the content; and
5 means for comparing the computed signature of the new content with a signature
6 of other content.

1 35. (Previously Presented) The network caching device of claim 34 wherein the means
2 for computing a signature further comprises:

3 means for identifying a set of markers associated with the protocol associated
4 with the content; and
5 means for obtaining appropriate markers associated with the content.

1 Please add new claims 36 *et al.*

1 36. (New) A method, comprising:

2 identifying a protocol encoding of a first content and a second content;
3 identifying a first signature of the first content and a second signature of the sec-
4 ond content, wherein each signature contains one or more protocol markers identifying
5 the content;
6 comparing one or more protocol markers within the first signature and the second
7 signature to determine whether the first content is identical to the second content; and
8 terminating transmission of the second content, if the first content and the second
9 content are identical.

1 37. (New) The method of claim 36, further comprising:

2 computing the first signature of the first content as the first content is converted
3 from raw data to the protocol; and
4 computing the second signature of the second content as the second content is
5 converted from raw data to the protocol.

1 38. (New) The method of claim 36, further comprising:

2 continuing transmission of the second content, if the first content and the second
3 content are not identical.

1 39. (New) The method of claim 36, wherein the one or more protocol markers associ-
2 ated with the first content comprises discrete cosine coefficients.

1 40. (New) The method of claim 36, wherein the one or more protocol markers associ-
2 ated with the second content comprises discrete cosine coefficients.

1 41. (New) The method of claim 36, wherein the one or more protocol markers associ-
2 ated with the first content comprises motion vectors.

1 42. (New) The method of claim 36, wherein the one or more protocol markers associ-
2 ated with the second content comprises motion vectors.

1 43. (New) The method of claim 36, further comprising:
2 identifying a length of the first content; and
3 identifying a length of the second content.

1 44. (New) A method, comprising:
2 determining a protocol of a new content;
3 computing a signature of the new content;
4 comparing the computed signature of the new content with other content stored in
5 a network cache to determine if the new content is identical to any the other content on
6 the network cache; and
7 terminating transmission of the new content, if the new content is identical any
8 other content on the network cache.

1 45. (New) The method of claim 44, further comprising:
2 continuing transmission of the new content, if the new content is not identical to
3 any other content within the network cache.

1 46. (New) The network caching device of claim 44 wherein the step of computing a sig-
2 nature further comprises:
3 identifying a set of markers associated with the protocol associated with the con-
4 tent; and
5 obtaining appropriate markers associated with the content.